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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,743	07/30/2003	Satoru Wakuta	116282	8916
25944	7590	03/23/2006		
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER WALTERS, JOHN DANIEL	
			ART UNIT	PAPER NUMBER
			3618	
DATE MAILED: 03/23/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/629,743		WAKUTA ET AL.	
	Examiner		Art Unit	
	John D. Walters		3618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 16-28 is/are rejected.
- 7) ☒ Claim(s) 9-15 and 29-43 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1 – 43 have been examined.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 – 5 and 16 – 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kashiwase (6,146,302) in view of Frank (5,842,534). Kashiwase discloses a vehicle comprising:

- a hybrid drive system (Fig. 17) which transmits output from an internal combustion engine (1) to an output portion (8) and inputs output from a second electric motor (4) to the output portion;
- a first electric motor (2);
- a power distribution planetary gear (3), the power distribution gear having a first rotation element (3a) to which output from the internal combustion engine is transmitted, a second rotation element (3c) that is operatively linked with the first electric motor, and a third rotation element (3b) that is operatively linked with the output portion;
- a transmission (5) interposed between the second electric motor and the output portion;

- a drive wheel (9);
- said hybrid system having a first electric motor (2), a power distribution planetary gear (3), a second electric motor and transmission (5), and in the power distribution planetary gear, output of the internal combustion engine is output to an output portion (8);
- said system having components aligned along an axis (Fig. 1), said components including said internal combustion engine (1), said first electric motor (2), said power distribution planetary gear (3), and said second electric motor (4) .

Kashiwase teaches output of the second electric motor is input to the output portion by a transmission, the output portion is operatively linked with the drive wheel. However, Kashiwase fails to teach the transmission having a “plurality of steps”. Kashiwase instead teaches a Continuously Variable Transmission (CVT) in which there are no “steps”.

However, Frank teaches a vehicle comprising a hybrid drive system including a multi-speed or step transmission (18) between a motor (12) and an output portion (20). A multi-speed transmission is advantageous over a CVT in that while a CVT has no “steps” or gearing which would lead to greater fuel economy, the CVT is a relatively “young technology” as opposed to a multi-speed, or step transmission which is a “mature technology” having been around for many decades. Due to this, reliability can be considered to be greater and cost less with the multi-step transmission of Frank.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to utilize the multi-step transmission in lieu of the CVT in the vehicle of Kashiwase.

Regarding claim 3, as Official Notice was taken and not traversed, it is now considered well known in the art that step transmissions, such as taught by Frank, have several mating pinions and gears which will change wheel speed relative to engine speed.

Regarding claims 4 and 5, see figure 17 of Kashiwase.

Claims 6 – 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kashiwase (6,146,302) in view of Frank (5,842,534), as applied to claims 1 – 5 and 16 – 28 above, and further in view of Hayabuchi et al. (6,558,534). Kashiwase in view of Frank fails to teach the internal structure of the transmission. However, Hayabuchi teaches an automatic transmission having a planetary gear set including four rotation elements, the planetary gear set being of the Ravigneaux type (first paragraph of column 3). A planetary gear unit having 4 rotation elements of the Ravigneaux type is advantageous in that the four rotation elements afford more “speed steps”, while the Ravigneaux design is very compact, requiring less installations space.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention that the transmission of the combination vehicle of Kashiwase and Frank include a planetary gear set with four rotation elements of the Ravigneaux type.

Regarding claim 8, see B1 and B2 of Hayabuchi.

Allowable Subject Matter

Claims 9 – 15 and 29 – 43 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments, see page 18, filed 12/6/2005, with respect to the Abstract and Specification have been fully considered and are persuasive. The objection of 7/6/2005 has been withdrawn.

Applicant's arguments, see page 18, filed 12/6/2005, with respect to informalities in claim 17 have been fully considered and are persuasive. The objection of 7/6/2005 has been withdrawn.

Applicant's arguments, see page 18, filed 12/6/2005, with respect to 35 U.S.C. § 112 have been fully considered and are persuasive. The rejection of 7/6/2005 has been withdrawn.

Applicant's arguments, see pages 18 and 19, filed 12/6/2005, with respect to the rejection(s) of claim(s) 1, 16 and 17 under 35 U.S.C. § 102 have been fully considered

and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of a re-examination of prior art in relation to Applicant's amended claims. Said rejections are detailed above.

Applicant's arguments filed 12/6/2005 have been fully considered but they are not persuasive.

Applicant states, "...claims 18 and 19...unpatentable over Kashiwase in view of Frank...claims 6 – 8...unpatentable over Kashiwase and Frank and further in view of Hayabuchi...Frank also combines the power of an internal combustion engine and an electric motor before input into a multi-speed transmission...even if one substitutes the multi-speed transmission for the continuously variable transmission, the combination does not suggest the subject matter of Applicant's claim 1...As to Hayabuchi...no reason to combine it into a hybrid system...does not overcome the deficiencies of the referenced with respect to claim 1..."

It is unclear why Applicant is arguing about the applicability of the above references in regards to claim 1 in what appears to be a discussion of claims 18 and 19. In any event, the above rejections provide reasoning and motivation to combine the references of record in their application with regards to Applicant's invention.

As the standard transmission of Hayabuchi is known to one of ordinary skill in the art at the time of applicant's invention, as proved by the prior art of record, it would be obvious to use it when installation space was limited, as stated in the above rejection.

For these reasons, the rejections stand.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Morisawa et al, Nita et al, Takano et al, Kraska et al, Cotes et al, Stridsberg, Raftari et al, McGee et al, and Syed et al teach hybrid drive systems.
- Martin et al teaches an eight speed transmission.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John D. Walters whose telephone number is (571) 272-8269. The examiner can normally be reached on Monday - Friday, 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Ellis can be reached on (571) 272-6914. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John D. Walters
Examiner
Art Unit 3618



CHRISTOPHER P. ELLIS
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JDW
